



SUBSTITUTE SPECIFICATION

ELECTROSTATIC CHUCK AND METHOD FOR MANUFACTURING THE SAME

by Inventors

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BACKGROUND OF THE INVENTION

1. Field of the Invention

[1] The present invention relates to an electrostatic chuck, and associated manufacturing process, for use in an etching apparatus for manufacturing semiconductors.

2. Description of the Related Art

[2] In a semiconductor manufacturing process, etching processes are repeatedly performed together with insulating film formation, diffusion processes, and photolithographic processes. There are two types of etching processes: wet etching and dry etching. The dry etching process is implemented using a plasma etching apparatus as shown in Figure 4. For example, with a semiconductor wafer W held on a chuck 12 in a processing chamber 11 of the etching apparatus, a reactive gas is introduced from an inlet 13 into the processing chamber 11 while high-frequency electric power 15 is applied between the chuck 12, which serves as a lower electrode, and an upper electrode 14 to generate a plasma in the processing chamber 11. Chemical reactions with radicals in the plasma and accelerated ions cause the semiconductor wafer W to be etched. More particularly, either the semiconductor wafer W itself or an insulating film (not shown) thereon is etched.

[3] As mentioned above, during the dry etching process, the semiconductor wafer W is held on the chuck 12. In recent etching apparatuses, the chuck 12 has been specified to be an

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